National Institute of Environmental Health Sciences

Fusarium mycotoxins in Lithuanian cereals from the 2004-2005 harvests

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Year: 2007
Journal: Annals of Agricultural and Environmental Medicine : Aaem. 14 (1): 103-107

Abstract:

Fusarium mycotoxins deoxynivalenol (DON), T-2 toxin, and zearalenone (ZEN) contamination in 5 kinds of cereal grain harvested in 2004 and 2005 in different regions of Lithuania was examined for their occurrence frequency and level. In all cereal species DON was the most frequently detected mycotoxin with an incidence rate of 98.0-100% and range in positive samples from traces to 691 microg kg(-1) in 2004 and 62.5-94.0%, range from traces to 1,121 microg kg(-1) in 2005, respectively. All the tested oat samples collected in 2004-2005 were found to be contaminated with the T-2 toxin. In one sample from the year 2004 the level of T-2 toxin (121.5 microg kg(-1)) exceeded the allowable level. In 2004, ZEN contamination was more frequent in spring wheat, barley and oats grain, whereas in 2005 this toxin was identified at higher levels only in barley grain (68.0%). In one barley grain sample from 2004, ZEN content (193.4 microg kg(-1)) exceeded the allowable level. Variation in the relative air-humidity exerted some effect on the incidence of Fusarium spp. fungi and mycotoxin content in wheat grain. The weather conditions at harvesting contributed to an increase in the contents of Fusarium fungi and DON and ZEN mycotoxins produced by them in winter wheat grain. This risk factor increases the threat to human and animal health.

Source: http://www.aaem.pl/pdf/14103.htm

Resource Description

Exposure : ☑

weather or climate related pathway by which climate change affects health

Food/Water Quality

Food/Water Quality: Biotoxin/Algal Bloom

Geographic Feature: ☑

resource focuses on specific type of geography

None or Unspecified

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : Lithuania

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Other Health Impact

Other Health Impact: mycotoxins

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified